REPORT TITLE: A STUDY OF THE RELATIONSHIP OF

GEOLOGICAL FORMATION TO THE

NORM

TYPE OF REPORT: QUARTERLY TECHNICAL PROGRESS

REPORT

INSTITUTION: CENTER FOR ENERGY AND ENVIRON-

MENTAL STUDIES

SOUTHERN UNIVERSITY BATON ROUGE, LA. 70813

REPORTING PERIOD START DATE: January 1, 2001

REPORTING PERIOD END DATE: March 30, 2001

PRINCIPAL AUTHORS: TALMAGE P. BURSH

DERALD CHRISS

REPORT ISSUE DATE: April 21, 2001

DOE AWARD NUMBER: DE-FG22-94MT94014

SUBMITTING ORGANIZATION: Southern University

Center for Energy and Environmental Studies

P.O. Box 9764

Baton Rouge, LA 70813

# TABLE OF CONTENTS

	PAGE
Abstract	i
Disclaimer	ii
Executive Summary	1
Project Introduction	1
Results and Discussion	1
Conclusion	1

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

## **ABSTRACT**

Naturally Occurring Radioactive Materials (NORM) is a common and costly contaminant of produced waters associated with natural gas production and exploration. One way of combatting this problem is by identifying the problem beforehand. Our approach to this problem involves development of NORM prediction capabilities based on the geological environment.

During quarter twenty six this project, work has continued in accordance with the project scope of work. Metals analysis has been done with additional testing continuing.

#### **EXECUTIVE SUMMARY:**

The Southern University Center for Energy and Environmental Studies is currently studying relationships which may exist between geological and radiological factors (NORM) in produced water samples. The goal also involves the observation of selected water parameters and determine their relationship to the aforementioned factors as well.

#### PROJECT INTRODUCTION:

This project is to consist of three major tasks: (1) Radiological Analysis, (2)

Correlative Results with Respect to NORM Activity, geological parameters and metals content, and (3) Technology Transfer.

The radiological results have been done by a subcontractor with the chemical analysis of samples and the geological component to be generated in-house or by another (as of yet undetermined source).

### **RESULTS AND DISCUSSION:**

During this reporting period, efforts were geared towards finalizing the metals analysis of the produced water samples of the sites selected. The appropriate methods, etc., are in place and are currently being employed.

# CONCLUSION:

We have obtained preliminary results and have reached some tentative conclusions from these results. These results will be indicated in the project final report.